

REMARKS

The above claim set assumes entry of Applicant's after-final response of May 19, 2003, as requested in the REQUEST FOR CONTINUED EXAMINATION attached herewith. (For clarity, claims marked as "Previously amended" in the above claim set were marked as "Currently Amended" in Applicant's after-final response.) Thus, with the entry of that after-final response and subsequent entry of this Preliminary Amendment, the instant application includes pending claims 1-35. In addition to considering the arguments presented in Applicant's after-final response, the examiner respectfully is requested to fully consider the arguments presented below.

With respect to claims 21-35 as added by the instant amendment, Applicant notes that such claims are fully supported by the application as filed, and that no new matter is added by their entry. Indeed, in looking at the new claims, they include one new independent apparatus claim—claim 21—which stands as a combined RF amplifier and bias circuit claim, and a closely corresponding independent method claim—claim 31. The new dependent claims substantially correspond to the originally filed dependent claims. The scope of the new claims is consistent with the originally filed claims, and all claims presented herein are fully supported by the application as filed.

As the instant application explains, prior approaches to RF device biasing include the use of a blocking circuit to isolate the bias circuit at least from the RF input signal. However, where the input RF signal includes amplitude modulations, particularly at higher input signal frequencies (e.g., 1+ GHz), such blocking circuits are partially or completely ineffective with respect to blocking the full range of disturbances signals appearing at the RF device's input. This ineffectiveness results because at least some of the disturbances occur at frequencies below any practical roll-off of the blocking circuit—keeping in mind that the blocking circuit must present a low dc resistance to the desired bias signal.

Prior approaches added a shunt capacitor—not part of the RF blocking circuit—at the bias voltage source to act as a low impedance source/sink for transient signal disturbances that would otherwise upset the bias voltage. The shunt capacitor used for this purpose is illustrated as “capacitor 40” in Fig. 1 of the instant application. However, the use of this shunt capacitor was problematic because of, among other reasons, the presence of the series current-limiting resistor on the output of the bias voltage source. Resistor 30 in Fig. 1 illustrates the use of the series current-limiting resistor, and one sees that the node interconnecting bias voltage source 35, shunt capacitor 40 and series resistor 30 has a tendency to “remember” past voltages as a function of the RC charge/discharge path established through resistor 30 and capacitor 40.


The present invention recognizes, among other things, that an active amplifier circuit could be put to the dual purpose of providing a fixed, dc bias voltage as well as acting as a “virtual capacitor” to sink and source current as needed to quash unwanted signal disturbances flowing in the bias circuit and thereby maintain the desired bias voltage. With this innovation, the bias circuit is made insensitive to signal disturbances flowing back into it, while simultaneously eliminating the undesirable capacitive memory effects that plague the described prior art biasing circuits.

None of the cited references disclose or even allude to the particular biasing problems being solved by the present invention and implementation of any or all of the circuits illustrated in the cited references would fail to solve that problem. As such, Applicant respectfully submits that none of these references disclose, or otherwise suggest, the instant invention as claimed.

Respectfully submitted,

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